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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,006	09/22/2003	Tetsuya Shiozaki	Q77349	5832

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WASHINGTON, DC 20037

EXAMINER

NWAONICHA, CHUKWUMA O

ART UNIT PAPER NUMBER

1621

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/665,006

Applicant(s)

SHIOZAKI ET AL.

Examiner

Chukwuma O. Nwaonicha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Current Status***

1. This action is responsive to Applicants' amendment of 28 September 2006.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1-5 are pending.
4. The rejection of claims 1-5 under 35 U.S.C. 103 as being unpatentable over US 2,776,996 in view of GB 1,166,961 for the reasons set forth in the previous Office Action of 6/14/05 is withdrawn in favor of a new rejection. Applicants have not amended the claims to overcome the 103 rejection.

### ***New Rejections***

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al., {US 5,925,794}.

Applicants claim a method for producing a 3-methylthiopropional in a continuous manner, the method comprising the step of supplying an acrolein and a methyl mercaptan together or sequentially with an acidic compound and a basic compound into a reaction system to react the acrolein with the methyl mercaptan, wherein the basic compound is used in an amount of about 0.3 mol or less per mole of the acidic compound; wherein all the other variables are as defined in the claim.

**Determination of the scope and content of the prior art (M.P.E.P. §2141.01)**

Hsu et al. teach a process for the continuous preparation of 3-(methylthio)propanal. A liquid reaction medium is contacted with a gaseous acrolein feed stream in a gas/liquid contact zone. The reaction medium contains 3-(methylthio)propanal, methyl mercaptan and a catalyst (acid/base) for the reaction between methyl mercaptan and acrolein. The gaseous acrolein feed stream comprises acrolein vapor and non-condensable gas. Acrolein is transferred from the acrolein feed stream to the reaction medium and reacts with methyl mercaptan in that medium to produce a liquid reaction product containing 3-(methylthio)propanal. The non-condensable gas is separated from the liquid reaction product. The reaction product is divided into a product fraction and a

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circulating fraction, and the circulating fraction is recycled to the gas/liquid contact zone.

**Ascertainment of the difference between the prior art and the claims**

**(M.P.E.P. §2141.02)**

Hsu et al. process for producing a 3-methylthiopropenal differs from the instantly claimed method for producing a 3-methylthiopropenal in that Hsu et al. teach a process that employed pyridinium acetate at a concentration of about 0.35 and about 0.5% while applicants claim a process wherein the basic compound is used in an amount of about 0.3 mol or less per mole of the acidic compound.

**Finding of prima facie obviousness--rational and motivation (M.P.E.P.**

**§2142-2143)**

The instant claimed method for producing a 3-methylthiopropenal would therefore have been suggested to one of ordinary skill because one wishing to obtain 3-methylthiopropenal is taught to select the processes of Hsu et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by reacting an acrolein and a methyl mercaptan with an acidic compound and a basic compound to arrive at the instantly claimed process. Said person would have been motivated to practice the teaching of the reference cited because it demonstrates that the process can be varied as desired.

The Examiner notes that replacing one material in a chemical synthesis with another material is a well-known technique in a chemical process to optimize

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the efficiency of the system and does not constitute a patentable distinction.

Additionally, merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality. In re Aller, 220 F.2d 454, 105 U. S. P. Q. 233 (C. C. P. A. 1955). The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

**No Claim is allowed.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman k. Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

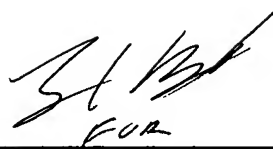
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Chukwuma O. Nwaonicha, Ph.D.

Patent Examiner

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A handwritten signature in black ink, appearing to read 'Thurman Page', is written above a horizontal line.

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Thurman Page,  
Supervisory Patent Examiner.  
Technology Center 1600